



EPA Should Prohibit or Restrict Discharges Associated with Large Scale Metallic Sulfide Mining in the Bristol Bay Watershed's Kvichak and Nushagak River Drainages

Pursuant to the Clean Water Act's Section 404(c) "Veto Authority," EPA has the authority to withdraw the use of an area as a disposal site for dredged or fill material when the discharge will have unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas.

Bristol Bay and its Watershed



The cool, shallow waters of Bristol Bay in southwestern Alaska are surrounded by tundra, crisscrossed by rivers and dotted with lakes large and small. It provides ideal conditions for the world's largest sockeye salmon run (record runs have exceeded 50 million fish annually) and Alaska's largest Chinook salmon run. These salmon runs are the linchpin of this wilderness, supporting valuable (over \$450 million annual) fish-related economic activity, indigenous people, and a vast array of wildlife including grizzlies, eagles, seals, whales, moose, and caribou – virtually the entire web of life associated with the region's ecosystem. The Obama Administration recognized the area's importance when it barred offshore oil and gas exploration and development activities in Bristol Bay, committing to

"protecting ocean areas that are simply too special to drill, such as Alaska's Bristol Bay." Highlighting the bay's world-class sockeye salmon runs and abundant wildlife, U.S. Interior Secretary Ken Salazar called Bristol Bay "a national treasure that we must protect."

Pebble Mine –Negative Impacts and Risk to Region

British mining giant Anglo American and Canadian-based Northern Dynasty Minerals established the Pebble Partnership to develop and operate a gold, copper, and molybdenum mine – Pebble Mine – at the headwaters of Alaska's Bristol Bay watershed. Given the size of the deposit and its remote location, any mining operation will leave an immitigable footprint on the region. Based on applications submitted by the Pebble Partnership in 2006 (later suspended upon its request) and other company publications, minimum initial plans include:

- An open pit 2.5 miles wide and 2,000 feet deep and an underground mine 5,000 feet deep.
- Five colossal earthen dams up to 740 feet high – larger than the Three Gorges Dam in China – built to store in perpetuity over 10 billion tons of mine tailings, contaminated with leach-prone toxic materials.
- Mine-related infrastructure, including major power plants and 86-miles of new road and hundreds of miles of slurry pipelines through untouched wilderness to a new deep water port constructed in Cook Inlet (home to the critically endangered Cook Inlet beluga whales).
- The annual removal of over 35 billion gallons of surface water from salmon habitat.



While the exact parameters of Pebble Mine are not yet known, EPA's standard for commencing the 404(c) process under the Clean Water Act (CWA) has clearly been met since there is "*reason to believe*" that "an 'unacceptable adverse effect' could result."¹

The certainty of habitat destruction and acid mine drainage associated with Pebble Mine, or indeed any large-scale metallic sulfide mine in the region, is further buttressed by the risks inherent to hard rock mining generally and amplified by the region's specific geology and ecology. A study of mines in the United States similar to the proposed Pebble Mine

¹ 40 CFR Part 231.3(a) (italics added).

showed that 85 percent of them polluted nearby waters (surface and or groundwater).² And due to the sulfides in the ore, the area's deposits are at high risk for acid and metals pollution. Such pollution would likely be lethal to Bristol Bay's famed salmon runs. For example, research conducted primarily by the National Oceanic and Atmospheric Administration shows that under certain conditions even small amounts of copper (an increase of as little as two parts per billion over background) can be toxic enough to impair olfaction, which is critical to salmon spawning and survival.³

Now is the Time for EPA to Initiate 404(c) Action



EPA should act preemptively and comprehensively by initiating action under Section 404(c) of the CWA. Given the Administration's position that Bristol Bay is "a national treasure that we must protect," now is the time for EPA to send a clear message that it will not allow the "unacceptable adverse effects" that will result from Pebble Mine or any large-scale metallic sulfide mine in the region. Such action will reinforce the finding already made by the Administration that the region's fisheries must be protected and will ensure that while one threat – oil and gas activities – has been removed, another threat – large-scale metallic sulfide mining – does not come in through the back door.

Taking preemptive action now is both environmentally and economically responsible. Economically, it ensures that mining interests do not continue to expend additional resources on projects that may be unacceptable. Addressing this issue at the front end, before permitting begins in earnest, will clear up uncertainties with respect to the long-term viability of large-scale metallic sulfide mining projects in the region. Environmentally, a preemptive approach reflects good-government practice, ensuring that an otherwise piecemeal approach to large-scale metallic sulfide mining in the region does not allow risky projects to slip through the cracks.

Such preemptive action is entirely consistent with regulations, which broadly define EPA's ability to make an "unacceptable adverse effect" determination prior to permit applications. Regulations define "unacceptable adverse effect" in terms of a "likely" – not certain – effect.⁴ Further, a proposed determination hinges on whether there is "reason to believe" that "an 'unacceptable adverse effect' *could* result."⁵ Finally, the regulations require consideration of relevant portions of the § 404(b)(1) Guidelines which declare that "[f]rom a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by these Guidelines," and establish a "guiding principle" that "degradation or destruction of special sites [*i.e.*, wetlands] may represent an irreversible loss of valuable aquatic resources."⁶

NRDC therefore urges EPA to take the following steps:

- The EPA Regional Administrator for Region 10 should immediately initiate a 404(c) action, placing the Army Corps of Engineers and the Pebble Partnership on notice that he intends to issue a Proposed Determination to withdraw a wide area of the Kvichak and Nushagak river drainages for discharge of dredged or fill material from large-scale metallic sulfide mining.
- Continue to meet with the Tribes and communities that will be adversely affected by mining in the region, who have determined that such mining poses too great a risk to their way of life and communities, including the Tribes in the Kvichak and Nushagak drainages, commercial fishermen, and native corporations.



² Kuipers, J.R., Maest, A.S., MacHardy, K.A., and Lawson, G. 2006. Comparison of Predicted and Actual Water Quality at Hardrock Mines: The reliability of predictions in Environmental Impact Statements. Kuipers & Associates. PO Box 641, Butte, MT USA 59703. 195p.

³ Baldwin, D.H., JF Sandahl, JS Labenia, and NL Scholz. 2003. Sublethal effects of copper on coho salmon: impacts on nonoverlapping receptor pathways in the peripheral olfactory nervous system. *Environmental Toxicology and Chemistry*. 22(10):2266-2274. AND Hecht, S. A., D. H. Baldwin, C. A. Mebane, T. Hawkes, S. J. Gross, N. L. Scholz. 2007. An overview of sensory effects on juvenile salmonids exposed to dissolved copper: Applying a benchmark concentration approach to evaluate sublethal neurobehavioral toxicity. U.S. Dept. of Commerce, NOAA Tech. Memo., NMFS-NWFSC-83, 39 p.

⁴ 40 CFR Part 231.2(e) (italics added).

⁵ 40 CFR Part 231.3(a) (italics added).

⁶ 40 CFR Part 230.1.